UNIVERSITÉ FRANÇAISE D'ÉGYPTE

BACHELOR OF EMBEDDED SYSTEMS AND ROBOTICS ENGINEERING

Overview

The Bachelor of Embedded Systems and Robotics Engineering is a 4-year Egyptian engineering degree taught in English. Students have the opportunity to pursue a French master's degree in just one additional year through our French partner universities. The program allows students to gain international hands-on experience, with various opportunities of knowledge transfer and exposure. It provides an in-depth understanding of embedded systems and robotics development, emphasizing software-hardware integration, system design, verification, and management.

WHY STUDY EMBEDDED SYSTEMS AND ROBOTICS ENGINEERING?

- Earn an Engineering bachelor's degree in just four years.
- Only one additional year is required to earn a master's degree from one of our partner universities in France, which includes a hands-on internship with a monthly salary at a French company. UFE students enjoy the same status as French nationals.
- Qualify for PhD programs worldwide upon completing the French master's degree.
- Hands-on experience and summer internships throughout the studying years, bridging the gap between academic knowledge and real-world skills.
- Engage with visiting professors from our French partner universities, cultivating a vibrant environment for knowledge exchange.
- Benefit from 1-2 semester(s) exchange and summer internship programs with our French partner universities.

Number of years	**4**	**ECTS**	**240**
French partner universities	**University of Haute Alsace, Technological University of Compiègne, Gustave Eiffel University, EFREI Panthéon-Assas University Paris II, CY Cergy Paris University, and CESI School of Engineering**		
Faculty	**Engineering and Architecture**		

POSSIBLE CAREER PATHS:

-Robotics Engineer
-Embedded Systems Engineer
-Human Computer Interaction Engineer
-Robotic / System QA Engineer
-Embedded Software Engineer
-System Design Engineer

STUDY COURSES:

SEMESTER 1

-Mathematics 1
-Physical Mechanics
-Waves and Electromagnetism
-Introduction to Programming
-Eco design
-French Language
-English Language

SEMESTER 2

-Mathematics 2
-Chemistry
-Geometrical Optics
-Logic Design
-Professional Project (Summer Internship)
-Languages Fr & En
-Elective 1

SEMESTER 3

-Technical Drawing
-Introduction to Applied Mathematics
-Project 1
Languages Fr & En
-Elective 2
-Software Engineering
-Object-oriented Programming

SEMESTER 4

-Statistics and Probabilities
-Structure and Physical Properties of Materials
-Thermodynamics 1
-Project 2
-Elective 5
-Algorithms and Data Structures
-Database Systems

SEMESTER 5

-Advanced Statistics and Probabilities
-Operating Systems
-Embedded Systems
-Computer Automatic Control
-Languages Fr / En
-Elective 8
• Computer Networks
• Communication Systems
-Elective 9
• Project Management
• Marketing Strategies
• Monitoring and Quality Control Systems

SEMESTER 6

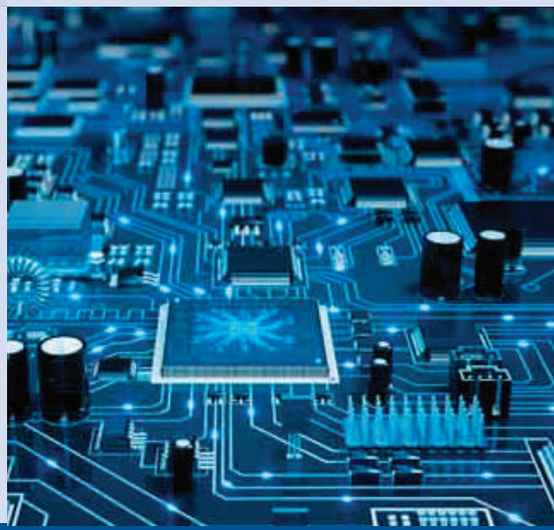
-Digital Signal Processing
-Computer Architecture and Organization
-Cloud Computing & IoT
-Sensors and Instrumentation
-Professional Project (Summer Internship)
-Languages Fr / En
-Elective 10
• Optimization Techniques
• Computer Simulation and Modeling
• Measurement Techniques

SEMESTER 7

-Computer Graphics
-Real-time Embedded Systems Design
-Robot Mapping and Localization
-Robot Kinematics and Dynamics
-Graduation Project 1
-Elective 11
• Planning Techniques for Robotics
• Mobile Robot Development
• Intelligent Machines

SEMESTER 8

-Computer Vision
-Cognitive Robotics
-Human Robot Interaction
-Graduation Project 2
-Legislation
-Elective 12
• Robotics Process Automation
• Mixed and Augmented Reality
• Decision Making under Uncertainty



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